Edwin E. Calverley
Kennedy School of Missions, Hartford Seminary Foundation

"AL-ABHARĪ'S 'ĪSĀGHŪJĪ FĪ 'L-MANṬIQ' "

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By Edwin E. Calverley

THE science of logic is of primary importance in Arabic studies. It is the introductory discipline for Muslim philosophy and theology. It provides the ideas, method, and vocabulary used in appraising the metaphysical sciences. One of its names in Arabic is *mi'yār al-'ulūm*, "the standard for measuring the sciences." Al-Ghazzālī recognized the practical necessity of logic for the defense and promotion of correct methods of thought and argument and prepared a number of books of his own on the subject, one of which he called *Mi'yār al-'ilm.*[1]

Although logic is one of the subjects utterly condemned by the early theologians of the strict traditionist school, it has survived that antagonism.[2] Indeed, the "Collections of Texts," *Majmū'āt al-mutūn*, published frequently at Cairo for the use of theological students,[3] include several texts on logic, and one of these is al-Abharī's *Īsāghūjī fī 'l-manṭiq*.

The title of al-Abharī's compendium is the same as that of Porphyry's "Introduction" to Aristotle's *Organon*, but, unlike Porphyry's work, al-Abharī's *Īsāghūjī* is not confined to a presentation of the Five Universals. It deals, although briefly, with all the nine divisions of logic.[4]

For western scholars the interest of the study of Arabian logic lies in the Muslim acceptance of the science from the Greeks and the adaptation of it to Muslim religious ideas.[5] For western stu-

[1] Muḥammad al-Ghazzālī, Maṭba'at Kurdistān al-'ilmīyah, *Mi'yār al-'ilm fī fann al-manṭiq*, Cairo, 1329.

[2] I. Goldziher, *Stellung der alten islamischen Orthodoxie zu den antiken Wissenschaften*. Berlin, 1916, pp. 24 *ff*.

[3] *ibid*., p. 42.

[4] *Encyclopaedia of Islam*, art. "Isaghudji," Vol. II, p. 527; George Sarton, *Introduction to the History of Science* (Carnegie Institute of Washington, 1927), Vol. I, p. 335; *Liber Mafātīh al-Olūm*, edidit G. Van Vloten (Leiden, 1895), pp. 140 *ff*.

[5] *Encyclopaedia of Islam*, art. "Manṭiḳ," Vol. III, pp. 258 *ff*.

dents of religion the translation furnishes a brief review of the accepted logical method in Muslim scholasticism. For Arabists the vocabulary provides in English a considerable number of technical terms of logic which have not yet been included in western lexicons of Arabic.[6] The importance of al-Abharī's *Īsāghūjī* is indicated not only by its inclusion in the "Collections of Texts," but also by the immense number of editions, commentaries and supercommentaries it has received.

Concerning al-Abharī himself Ibn Khallikān has the following notice: "In the year 625 [A.D. 1228] the Shaikh Athīr al-Dīn al-Mufaḍḍal al-Abheri, the author of the *Tālīka fi 'l-Khilāf* [notes on controverted matters], the *Zīj* [astronomical tables], and other well known works, left Mosul and came to Arbela where we were then residing. He took up his lodgings in the Dār al-Ḥadīth [school for traditions], and I studied under his direction some controverted points of jurisprudence." He then relates several stories of al-Abharī's regard for his teacher Kamāl al-Dīn ibn Manā.[7]

Ḥājjī Khalīfah adds still others to the list of al-Abharī's works given by Brockelmann.[8] In Vol. I, p. 502, he states that the work on logic current in his time was that attributed to al-Abharī, and that the name "Īsāghūjī" was used by metonomy for the whole subject. He explains the name as a Greek word meaning the Five Universals, i.e. genus, species, difference, property, and accident. Porphyry's Εἰσαγωγή consists of the definition of these terms and the description of their interrelations. Among the MSS. in the Library of the Hartford Seminary Foundation is the *Commentary* of Khair al-Dīn[9] on al-Abharī's *Īsāghūjī*. In this the title is said to be a Syriac expression for the Five Universals. Two views are given to account for the naming of the book. One view is that

[6] Some of these terms are not found in the most extensive of the special vocabularies of philosophical Arabic, M. Horten, *Die Spekulative und Positive Theologie des Islams* (Leipzig, 1912).

[7] *Ibn Khallikan's "Biographical Dictionary,"* translated from the Arabic by MacGuckin de Slane (Paris, 1843-1871), Vol. III, pp. 468 *f.*

[8] C. Brockelmann, *Geschichte der arabischen Litteratur* (Weimar, 1898, 1892), Vol. I, pp. 464 *f.*; *Encyclopaedia of Islam*, art. "Barhebraeus," Vol. I, p. 658; Sarton, *op. cit.*, Vol. II, Part II, p. 867.

[9] Brockelmann, *op. cit.*, Vol. I, p. 465, n. 3.

the title is the proper name of the philosopher who elucidated the Universals and composed a work about them. The other view is that it is the name of a person in whose charge one of the early philosophers left the work. That person used to speculate about the meaning of the terms, but was unable to understand their meaning. When the philosopher returned, that person read with him, and the philosopher kept addressing him during the lesson and saying, "O Īsāghūjī, this is it!" He repeated this time and again, so that it became the title of the work! The same interpretations are given also in two MS. copies of the *Commentary* of Zakarīyah al-Anṣārī,[10] although there the correct explanation that the word means *madkhal*, or "Introduction," is also given.

It is worth while to note that, although the commentaries are inaccurate and uncertain when dealing with al-Abharī's title, they are clear and helpful when they deal with the text itself.

It is a pleasure to acknowledge indebtedness to Dr. Joshua Finkel for a number of helpful suggestions.

I. ĪSĀGHŪJĪ FĪ 'L-MANṬIQ

Athīr al-Dīn Mufaḍḍal bin 'Umar al-Abharī

This is a tractate on logic in which we have set forth what should be presented to beginners in any of the sciences.

A predicable (*lafẓ dāll*) designates its subject (a) wholly, by apposition (*muṭābaqah*), or (b) partially, if it be something that has a part, by inclusion (*taḍammun*), or (c) it designates what is associated with it in the mind by necessary inference (*iltizām*). Thus the word "man" designates (a) "rational animal" by apposition; or (b) one [species] of the two [species, i.e. that which reasons and that which is animal] by being included [in both]; or (c) one capable of [acquiring] knowledge and the art of writing, by necessary inference, as "man" [implies "being capable of those qualities" and vice versa].

The expression [*lafẓ*, i.e. the predicable] may be (a) singular (*mufrad*), as, "the man," where a part of the expression does not

[10] Brockelmann, *op. cit.*, Vol. I, p. 465, n. 5.

indicate a part of its meaning;[11] or (b) compound (*mu'allaf*), as "the thrower of stones" [where each element has its own part in the meaning of the expression].

A singular (*mufrad* [expression or term]) may be (a) universal (*kullī*), i.e. the primary mental image of its meaning (*nafsu taṣawwuri mafhūmihi*) does not exclude the occurrence of participation (*sharikah*) in regard to it;[12] or (b) particular (*juz'ī*), where the primary mental image of its meaning [as contrasted with what may be understood by deduction] excludes the term from universal application, as the word "Zaid" used as a proper noun.

A universal may be (a) essential (*dhātī*), i.e. apply to the specific nature (*ḥaqīqah*) of the particulars (*juz'īyāt*) of which it is constituted, as "animal" [is the universal, essential expression] in [relation to the two species to which] "man" and "horse" [belong]; or (b) it is accidental (*'araḍī*), which is just the opposite,[13] as "risible" [is an accident] in respect of "man."

An essential expression (*al-dhātī*) is a predicament (*maqūl*) answering the question "What is it?" (a) in reference only to what is common [to two or more things], as "animal" in relation to "man" and "horse." This is called Genus (*al-jins*), which may be described (*yursamu*) as the universal that is predicated of many things differing in their species (specific natures, *ḥaqā'iq*) in answer to the question, "What is it?"

What is predicated in answer to the question, "What is it?" (b) when this question has reference both to what is common and what is individual (special, *al-khuṣūṣīyah*), as "man" with reference to individuals (*afrād*), such as Zaid and 'Amr, is Species (*naw'*). Species may be described as the universal predicament applying to many differing in number, but not in specific nature, in answer to the question, "What is it?"

[11] In grammar, each part of a single expression, whether article, or vowel of inflexion, or, in the case of a verb, each vowel and servile letter, has its part in indicating the full meaning of the expression.

[12] This is the usual technical way of saying that what is immediately understood by the expression "man" is universally applicable to man as a genus.

[13] That is, it does not refer to the essential nature.

The predicament that does not apply to the question, "What is it?" but rather (c) to the question, "What [kind of a thing] is it in itself?" (*aiyu shay'in huwa fī dhātihi*) and differentiates it from the things that share with it in genus,[14] is Difference (*al-faṣl*), as "rational" in reference to man. Difference may be described as the universal predicament applied to a thing in answer to the question, "What is it in itself?"

An accident (*al-'araḍī*) may be (1) one whose separability (*infikāk*) from its substance (*al-māhīyah*) is excluded, which is the inseparable accident (*al-'araḍ al-lāzim*), or (2) [one whose separability is] not excluded, which is the separable accident (*al-'araḍ al-mufāriq*).

Each of these two [kinds of accidents has two subdivisions]. (d) The first belongs to one species, in which case it is the specific accident or Property (*al-khāṣṣah*), as "risible" is a potentiality (*al-qūwah*) and action (*al-fi'l*) of man. It is described as the universal which is predicated of what comes under one species only as an accidental predicament (*qawl 'araḍī*). (e) The second may be common to more than one species. This is the accident in common (*al-'araḍ al-'āmm*), as "breathing in air" is a potentiality and action in reference to man and others of the genus "animal." It is described as the universal predicament that is applied to what comes under differing species as an accident.

II. DEFINITION (*AL-QAWL AL-SHĀRIḤ*)

A definition is a term designating what a thing is (*al-ḥaddu qawlun dāllun 'alā māhīyati 'l-shay'i*). It may be composed (*yatarakkabu*) of the proximate genus (*al-jins al-qarīb*) and the proximate difference (*al-faṣl al-qarīb*) of the thing, as "rational animal" in reference to man. This is the perfect definition (*al-ḥadd al-tāmm*). The imperfect definition (*al-ḥadd al-nāqis*) is composed of the thing's remote genus (*al-jins al-ba'īd*) and its proximate difference, as "rational body" with reference to man. It may be a perfect description (*al-rasm al-tāmm*), which is composed of the thing's proximate genus and its inseparable specific accidents or properties (*al-khawāṣṣ al-lāzimah*), as "risi-

[14] That is, belong to the same genus.

ble animal" in defining (*ta'rīf*) man. The imperfect description is composed of accidents, the whole combination of which [but not each component part] belongs specifically to one species, e.g. what we say in defining man as "walking upon two feet, having broad finger-nails and a clear skin, standing erect and very risible by nature."

III. PROPOSITIONS (*AL-QAḌĀYĀ*)

A proposition is a sentence (*qawl*) of which it is valid to say that the one uttering it is telling the truth or lying. It may be either (a) categorical (*ḥamlīyah*), as "Zaid is a writer"; or (b1) it may be conjunctive hypothetical (conditional, *sharṭīyah muttaṣilah*), or (b2) it may be disjunctive hypothetical (i.e. alternative, *sharṭīyah munfaṣilah*), as "A number is either even or odd."

The first term of the categorical [proposition] is called the subject (*mawḍū'*), and the second is called the predicate (*maḥmūl*). The first term of the hypothetical is called the antecedent (*muqaddam*), and the second is called the consequent (*tālī*).

A proposition is either positive (*mūjabah*), as "Zaid is a writer," or negative (*sālibah*), as "Zaid is not a writer." Each of them [i.e. the positive and the negative] is either individual (*makhṣūṣah*), as we have just mentioned [in the example, "Zaid is a writer"], or it is universal with its sign (*kullīyah musawwarah*), as "Every man is a writer" and "No man is a writer"; or it is particular with its sign (*juz'īyah musawwarah*), as "Some men are writers," and "Some men are not writers"; or it is not of these varieties but is indefinite (*muhmalah*), as "Man is a writer," and "Man is not a writer."

The conjunctive hypothetical proposition may be either (a) necessary (*lazūmīyah*), as "If the sun has risen, day has appeared," or (b) it may be coordinate (*ittifāqīyah*), as "If men are speakers, then donkeys are brayers."

The disjunctive hypothetical proposition may be inherent (*ḥaqīqīyah*, natural [some of the English logicians use the term "necessary" for this class of propositions]); i.e. both incompatible and non-exclusive (*māni'atu 'l-jam'i wa 'l-khulūwi*), as "A

number is either even or odd"; or incompatible in affirmation only [i.e. excludes coexistence] (*māni'atu 'l-jam'i*), as "This thing is either a tree or a stone"; or non-exclusive (*māni'atu 'l-khulūwi* [i.e. valid only when negative antecedent is true or positive consequent is true]), as "Zaid is either at sea or he will not be drowned." The disjunctive hypothetical proposition may also be compound (*dhātu ajzā'in*), as "The number is more or less or equal."

IV. OPPOSITION (*AL-TANĀQUḌ*)

Opposition is the difference of two propositions in affirmation (*al-ījāb*) and negation (*al-salb*), wherein it is required that the essence (*al-dhāt*) [in distinction from the form] of one of them be affirmative and the other negative, as "Zaid is a writer; Zaid is not a writer." This is not valid (*lā yataḥaqqaqu*) unless both propositions are congruous (*ittifāq*) in subject, and predicate, in time, place, relationship (*al-iḍāfah*), potentiality and action, in particular, universal and condition (*al-sharṭ*), as "Zaid is a writer; Zaid is not a writer." The contradictory (*al-naqīḍ*) of an affirmative universal is a negative particular, as "Man is animal; some men are not animals." The only contradictory of a negative universal is an affirmative particular, as "No man is animal"; and "Some men are animal." Opposition is not valid in the case of the two universal and particular propositions (*al-maḥṣūratān*)[15] unless there is expressed a difference in quantity (*al-kammīyah*), because the two universals [i.e. the positive and the negative] may be false, as "Every man is a writer," and "No man is a writer," while the two particulars may be true, as "Some men are writers," and "Some men are not writers."

V. CONVERSION (*AL-'AKS*)

Conversion occurs when the subject becomes the predicate and the predicate becomes the subject, while the negative and positive remain the same and the truth (*al-taṣdīq*) and falsity (*al-takdhīb*) [of the statements] remain the same. The universal affirmative may not be converted (*tan'akisu*) into a universal,

[15] These are the propositions, positive and negative, with their respective distributive or undistributive signs of "all," "every" or "none" and "some."

since the proposition (*qawl*) is true, "Every man is an animal," while it is not true that "Every animal is a man." But it may be converted into a particular, because when we say, "Every man is an animal," it is true to say, "Some animals are men," for we find something to be described in both animals and men, so that some animals are men.[16]

The particular affirmative may also be converted into a particular by the same argument (*al-ḥujjah*). The universal negative may be converted into a universal negative, and that is self-evident, because, when it is true, e.g. that "No man is a stone," it is true that "No stone is a man." The negative particular has no converse (*ʿaks*), of necessity (*luzūm^an*), for it is true that "Some animals are not men," and the converse of it is not true.

VI. SYLLOGISM (*AL-QIYĀS*)

A syllogism is a proposition (*qawl*) expressed (*malfūẓ*) or understood (*maʿqūl*), composed of such propositions that when they are granted (*sullimat*) they of themselves necessitate the validity of another proposition. The syllogism may be either (a) connective (*iqtirānī*, i.e. categorical) as, "Every body is compound, and every compound is originated (*ḥādith*), so every body is originated." Or it may be (b) exceptive (*istithnāʾī*, i.e. hypothetical), as, "If the sun has risen, day has come; but day has not come, so the sun has not risen."

The repeated term (*al-mukarrar*) of the two premises (*al-muqaddimah*) of the syllogism is called the middle term (*ḥadd awsaṭ*). The subject of the conclusion (*al-maṭlūb*) is called the minor term (*ḥadd aṣghar*), and its predicate is called the major term (*ḥadd akbar*). The premise which has the minor term is called the minor premise (*muqaddimah ṣughrā*). The one with the major term is called the major premise (*muqaddimah kubrā*). The form of the arrangement (*haiʾatu ʾl-taʾlīfi*) is called the figure (*al-shakl*). There are four figures. If the middle term is predicate in the minor premise and is the subject in the major, this is the first figure. If it is the converse of that, it is the fourth

[16] This is conversion *per accidens*.

figure. If it is the subject of both, it is the third figure. If it is the predicate of both, it is the second figure.

The second figure is transformed (*yartaddu*, i.e. reduced) to the first by converting the major premise. The third is reduced by converting the minor premise. The fourth is reduced to it by transposing the order (*bi'aksi 'l-tartīb*), or by converting the two premises together.

The perfect figure (*al-kāmil*), whose inference (*al-intāj*) is obvious, is the first. The fourth is very awkward (*ba'īd*[un] *'ani 'l-ṭab'i*). One whose nature is normal (*ṭab' mustaqīm*) and whose mind is sound (*'aql salīm*) has no need to reduce (*radd*) the second to the first. The second provides a valid inference only when its two premises differ in affirmation and negation.

The first figure is the one which is made the gauge (*mi'yār*) for the sciences, so we will present it here, so that it may be taken as a model (*dustūr*), in order that all the conclusions may be inferred from it. The condition (*al-sharṭ*) of its giving a valid inference is that its minor premise be affirmative and its major premise be universal. There are four useful moods (*al-ḍurūb al-muntijah*):

1. Every body is compound; every compound is originated (*muḥdath*); so every body is originated. (This is Barbara.)

2. Every body is compound; no compound is eternal (*qadīm*); no body is eternal. (Celarent.)

3. Some bodies are compound; every compound is originated; so some bodies are originated. (Darii.)

4. Some bodies are originated; no compound is eternal; so some bodies are not eternal. (Ferio.)

The connective or simple syllogism (*al-qiyās al-iqtirānī*) is composed of two categorical propositions, as we have seen, or of two conjunctive hypotheticals, as "If the sun has appeared, day has come, and whenever day has come, the earth is lightened," so the inference is valid, "If the sun has appeared, the earth is lightened." Or it may be composed of two disjunctive hypotheticals, as "Every number is either even or odd, and every even number is either double an even number or double an odd number; therefore, every number is either odd, or double an even number or double an odd number."

In the exceptive or compound syllogism (*al-istithnā'*), the contrary of the consequent (*naqīḍu 'l-tālī*) validates the inference of the contrary of the antecedent (*al-muqaddam*), as, "If this is a man, then he is an animal; but this is not an animal, so it is not a man." If it is an inherent (necessary) disjunctive (*munfaṣilah ḥaqīqīyah*), then the hypothesis (*istithnā'*) of the truth (*'ain*) of one of the two parts validates the inference of the contrary of the other, as "A number is either even or odd; it is even, therefore it is not odd," or, "it is odd, therefore it is not even." Likewise, the hypothesis of the contrary of the one validates the inference of the truth of the other.

VII. DEMONSTRATION (*AL-BURHĀN*)

1. Demonstration is argument (*qiyās*) composed of premises that are certain (*yaqīnīyah*), for the valid inference of other certainties. The certain truths (*al-yaqīnīyāt*) have [six] divisions: (a) The first are axiomatic (*al-awwalīyāt*), as, "One is half of two," and "The whole is greater than the part." (b) Perceptive (*al-mushāhadāt*), as, "The sun is a shining [body]," and "Fire burns." (c) Experimental (*al-mujarrabāt*), as, "Scammony is a purgative for bile." (d) Conjectural (*al-ḥadsīyāt*), as, "The light of the moon is reflected from the light [of the sun]." (e) Traditional (*al-mutawātirāt*),[17] as, "Muḥammad claimed prophetship and miracles appeared from him." (f) [Self-evident] propositions, whose arguments (*qiyāsātuhā*) accompany them, as, "Four is even," on account of the reason present in the mind, which is its divisibility into two equal parts.

2. Dialectic (*al-jadal*): this is argument (inference, *qiyās*) composed of premises known or[18] conceded (*musallamah*)[19] among men, or by the two disputants, as "Justice is good and oppression is evil."

3. Rhetorical (*al-khaṭābah*): this is argument composed of premises received from some person believed in, or presumed.

[17] These traditions are of a special character: they represent the united testimony of many witnesses, and this quality gives them their authority.

[18] The *Collections of Texts* of Cairo dated 1323, 1340, and 1347 all print *lā* for *aw*, but our MSS. copies have the correct reading.

[19] The Cairo 1340 edition incorrectly reads *musallimah*.

4. Poetical (*al-shi'r*): this is argument composed of premises, acceptable and imagined, by which the soul is pleased or grieved.

5. Sophistical (*al-mughālaṭah*): this is argument composed of false premises, resembling what is real, or of what is commonly accepted, or of premises based on false supposition.

Reliance (*al-'umdah*) may be placed upon demonstration only.

THE MACDONALD PRESENTATION VOLUME

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DEDICATION

MORE than forty years ago, there came to Connecticut to assume a position on the faculty of the Hartford Theological Seminary, a brilliant young Scot, fresh from advanced studies at the University of Berlin, and giving promise of noteworthy leadership in the fields of Old Testament and Semitics. From that time on, the name of Duncan Black Macdonald has been a symbol of all that is most significant in Semitic scholarship. Against a steady background of Old Testament teaching, with memorable courses in exegesis and interpretation, Professor Macdonald developed as his primary interest an authoritative mastery of the language and literature, the theology and the philosophy, the laws and the history of the Semitic world in general, the full content of Islam in particular.

His many lectureships in important colleges and universities and the many articles he has contributed to various publications, notably the *Encyclopaedia of Islam* and the *Encyclopaedia Britannica*, as well as his stimulating teaching in classroom week after week and year after year, always fresh and convincing—these all are slight evidences of the vast reservoirs of knowledge and spiritual appreciation from which and through which he has so richly served the ecclesiastical and the academic world.

Upon the occasion of his seventieth birthday, a group of his students, most of whom have worked under his direction at Hartford, either in the Theological Seminary or the Kennedy School of Missions, are eager to do him honor, and have prepared this Presentation Volume of various representative studies. These essays are dedicated to Professor Macdonald not only as the results of scholarly research, but also as a tribute of personal affection. They carry with them also the unexpressed felicitations of many others who have come under the influence of a truly great teacher.

This volume is thus offered in congratulation upon a distinguished career already well rounded, and in hope that there may be given to him and to the world many more years of creative effort issuing from his mature scholarship.

These brief words of explanation and introduction come from one who counts himself of the host who have been instructed and inspired by Duncan Black Macdonald.

ROBBINS WOLCOTT BARSTOW

Office of the President,
Hartford Seminary Foundation
August 2, 1932

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